

ABSTRACT

To decrease the number of arithmetical operations in a filtering process for decoding a digital signal and reduce a cost required for decoding. A filtering method for use in decoding a digital signal from a frequency domain to a time domain includes: a first step of multiplying an input data stream and a transformation matrix that is decomposed into a sparse matrix from an inverse MDCT transformation matrix for making the inverse MDCT transformation of the input data stream composed of a plurality of data blocks, and has a smaller size than the inverse MDCT transformation matrix, to acquire an output data stream composed of a plurality of data blocks; a second step of storing predetermined data contained in each data block of the output data stream; and a third step of generating the digital signal in the time domain on the basis of each data block acquired at the first step and the predetermined data stored at the second step in processing the former stage data block.